



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------|------------------|
| 10/523,928 | 10/17/2005 | Michael Kirst | KIRS3001/FJD | 1895 |
| 23364 7590 02/12/2007 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314 | | | EXAMINER LAU, TUNG S | |
| | | | ART UNIT 2863 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 02/12/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/523,928

Applicant(s)

KIRST, MICHAEL

Examiner

Tung S. Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01/25/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Amendments to the Abstract

1. The Amendments to the Abstract filed on 01/25/2007 is objected by the examiner:

'Means' is an improper legal phraseology often used in patent claims and should be avoided, correction is required. See MPEP 608.01(b) [R-3].

Amendments to the Specification

2. The Amendments to the specification filed on 01/25/2007 (Amendments to the title and page 5 and 6 with rewritten paragraph) has been accepted by the examiner.

Drawings

3. The drawings filed on 01/25/2007 has been accepted by the examiner.

Claim Objection

4. Claim 31 is objected as it an improper multiple dependent claim on multiple dependent claim (claim 25 is a multiple dependent claim), the examiner assumes claim 31 is depend on claim 13 for this examination, correction is required. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2863

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-22 and 24-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Fleckner et al. (U.S. Patent Application Publication 2004/0086768, filed on Aug. 18, 2000).

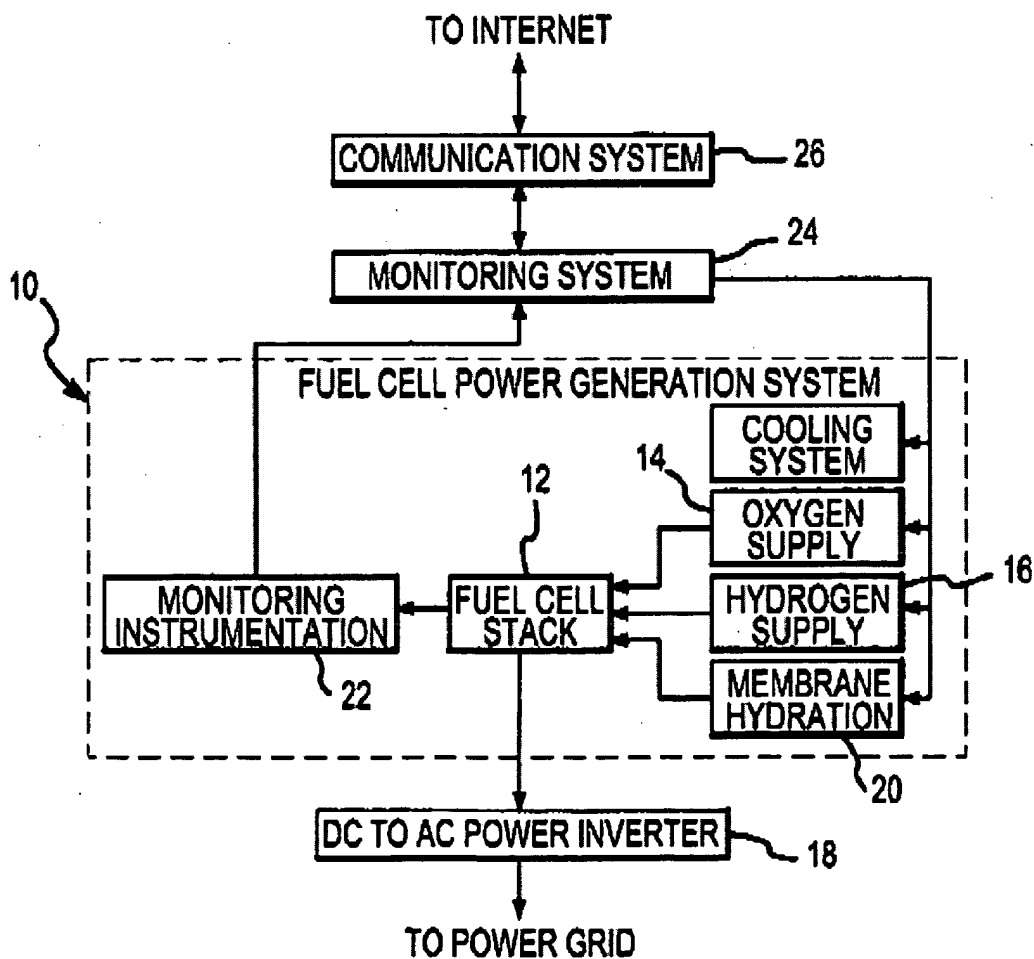
Regarding claim 13:

Fleckner described an apparatus for determining and/or monitoring a physical or chemical variable in a process (fig. 1, unit 24), comprising: a remote control station (fig. 1, unit 26, page 3, section 0035); data connection (fig. 10, unit 174); at least one field device (fig. 9, fuel cell monitoring section) with a sensor (fig. 1, unit 22) for determining at least one physical process variable (page 3, section 0035, lines 5, 6, monitor fuel levels), said at least one at least one field device (fig. 1, unit 22) exchanges data with said remote control station via said data connection (fig. 1, unit 26, page 3, section 0035); and at least one fuel cell electrically connected with said at least one field device (page 6, section 0104, fig. 10, unit 154, 156, 158), wherein: said at least one fuel cell (fig. 10, unit 152) at least partially covers the energy requirement of said at least one field device (fig. 10, unit 152, 156, 158), and said at least one fuel cell is arranged remotely from said at least one field device (page 7, section 0109, fig. 11, network control)).

Art Unit: 2863

Regarding claim 14, Fleckner further described data connection between the control station (fig. 1, unit 10) and said at least one field device (fig. 1, unit 12) is accomplished wirelessly (page 3, section 0035).

Regarding claim 15, Fleckner further described multiple field devices are provided (page 6, section 0086, where device in fig. 1, unit 10 are installed in homes to created electricity), which are electrically connected with said at least one fuel cell (fig. 1, unit 12).

**FIG.1**

Regarding claim 16, Fleckner further described said data connection includes one of: a field bus (fig. 10, unit 178) and a two-wire line (fig. 10, unit 174, page 7, section 0106, connection are in serial, two wires connection in serial configuration, one wire is data, the other is ground reference, fig. 10, unit 178).

Regarding claim 17, Fleckner further described said at least one fuel cell (fig. 10, unit 152) is connected with said at least one field device via said field bus (fig. 10, unit 174, 178).

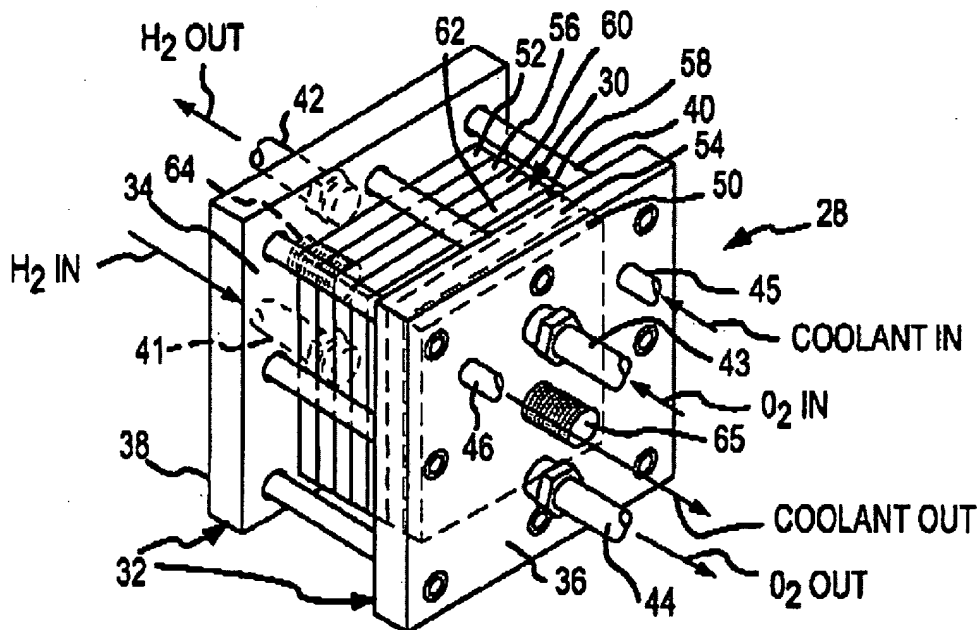


FIG.2

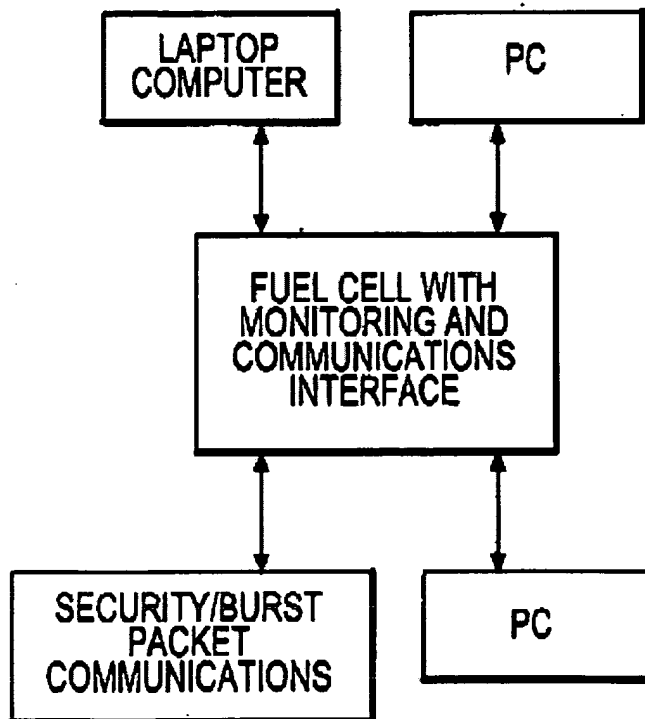
Regarding claim 18, Fleckner further described said at least one fuel cell (fig. 1, unit 12) is arranged in said control station (fig. 1, unit 10).

Regarding claim 19, Fleckner further described a first field cell and a second field cell are provided (fig. 2, unit 52, 56, 60, 30), and said at least one field

Art Unit: 2863

device is connected (fig. 10, unit 151), at least at times, with said first fuel cell and said second fuel cell (fig. 2, unit 52, 56, 60, 30).

Regarding claim 20, Fleckner further described said at least one field device is connected, at least at times, with only one (fig. 1, unit 12) of the two fuel cells (page 6, section 0086, where device in fig. 1, unit 10 are installed in homes to created electricity),.

**FIG.9**

Regarding claim 21, Fleckner further described multiple fuel cells are combined into a fuel cell package (fig. 2, unit 52, 56, 60, 30).

Regarding claim 22, Fleckner further described said at least one field device is positioned in an area where there is danger of explosion (fig. 1 unit 16, where hydrogen is highly flammable).

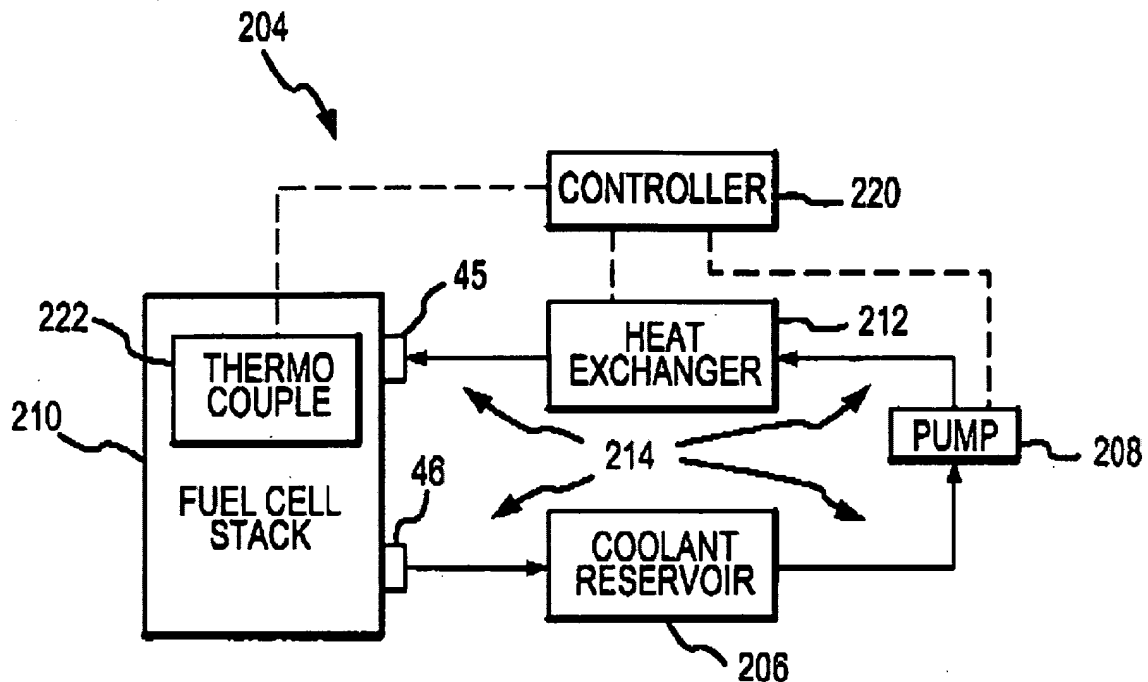


FIG.12

Regarding claim 24, Fleckner further described a fueling unit (fig. 1, unit 14, 16), via which said at least one fuel cell can be fueled (fig. 1, unit 12).

Regarding claim 25, Fleckner further described said data connection between the control station and said at least one field device is accomplished via a data line (fig. 1, unit 24, contains 'data line').

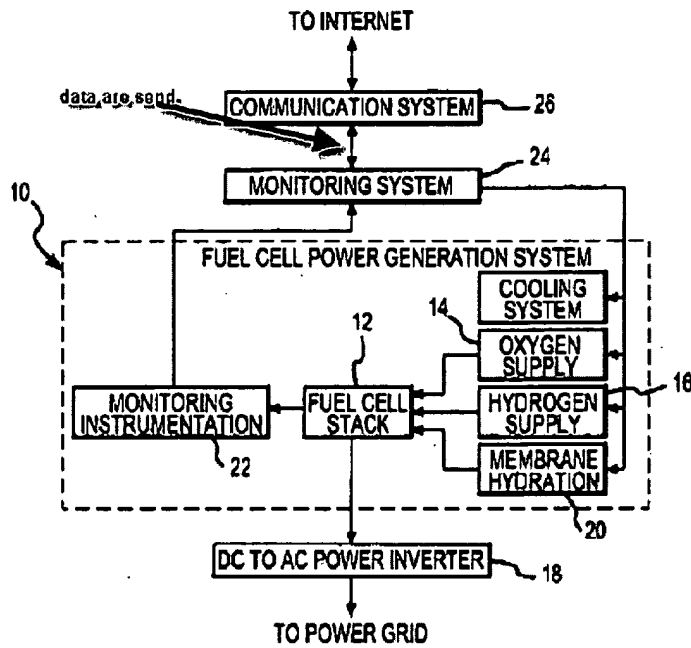


FIG.1

Regarding claim 26, Fleckner further described said data connection includes a two-wire line (fig. 10, unit 154).

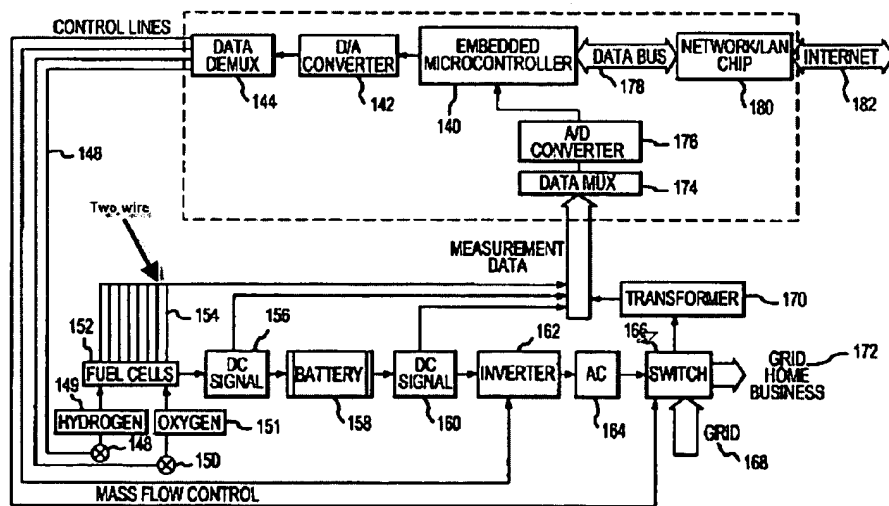


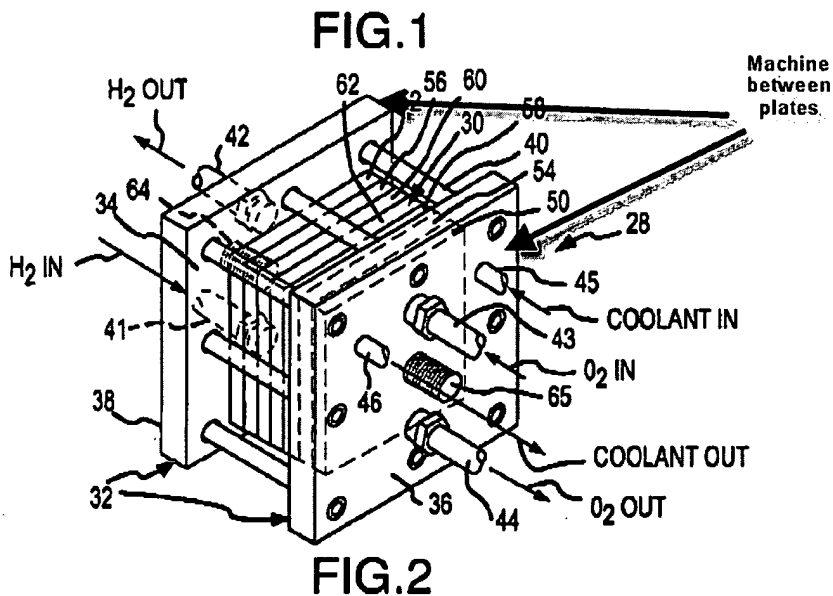
FIG.10

Art Unit: 2863

Regarding claim 27, Fleckner further described said at least one fuel cell is connected with said at least one field device (fig. 10, unit 174) via said two-wire line (fig. 10, unit 154).

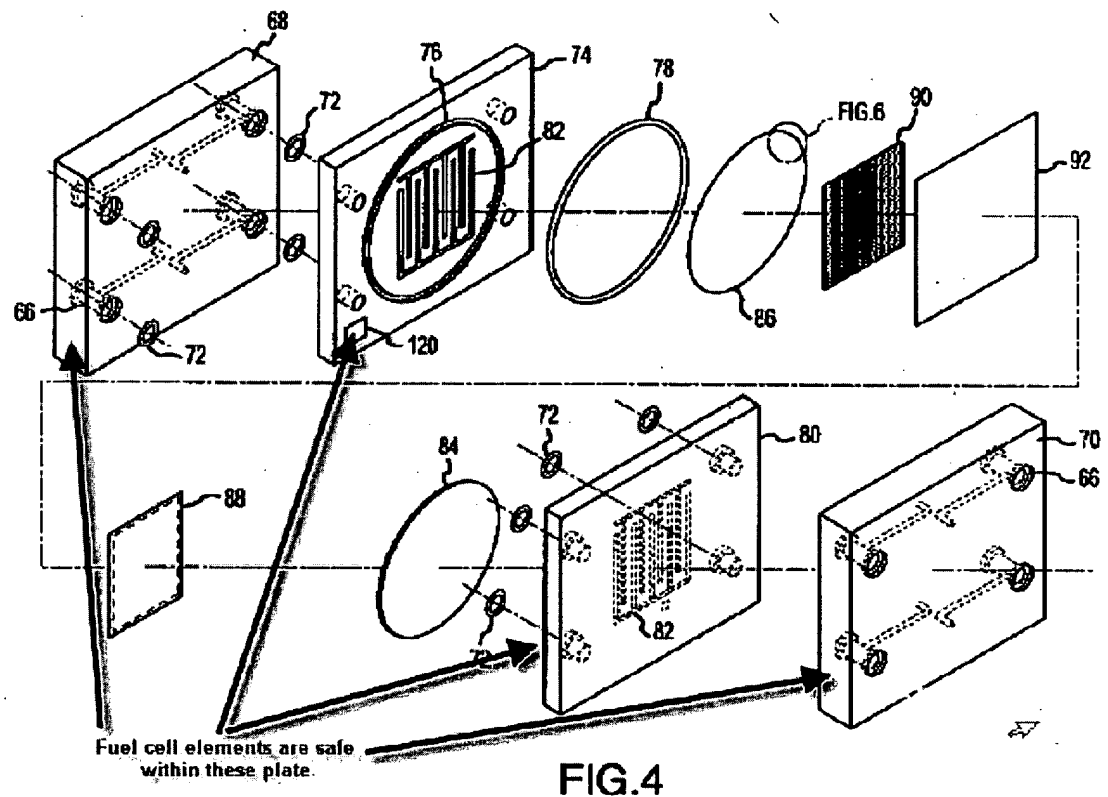
Regarding claim 28, Fleckner further described said fuel cell supply the field device with energy from a remote, safe location (page 3, section 0035, a wireless remote safe location).

Regarding claim 29, Fleckner further described said at least one fuel cell is arranged in an explosion-protected zone (fig. 2, unit 64, 50, fig. 4, unit 78,70).



Regarding claim 30, Fleckner further described said at least one fuel cell is connected with field bus via a connection line (fig. 1, unit 22).

Regarding claim 31, Fleckner further described energy is supplied from said at least one fuel cell to the field bus via a connection line (fig. 1, unit 22, power from fig. 1 unit 12).



Regarding claim 32, Fleckner further described a monitoring unit for said fuel cell (fig. 1, unit 12), said monitoring unit signalling when a fuel supply of said fuel cell (fig. 1, unit 14, 16, 20) falls beneath a predetermined limit value (page 6, Section 0090-0098, different level of fuel pressure, flow, temperature are monitor and store).

[0090] Referring now primarily to FIGS. 10 and 11, an embedded microcontroller/microprocessor 140 controls the flow of information between the fuel cell(s) and a remote site from which one may execute a variety of commands to control or monitor the status of the fuel cell's operation or fuel levels, etc. Parameters which may be monitored and/or controlled include, but are not limited to:

- [0091] fuel pressure
- [0092] fuel flow rate
- [0093] oxidizer pressure
- [0094] oxidizer flow rate
- [0095] fuel cell temperature
- [0096] fuel cell internal resistance
- [0097] fuel cell output voltage
- [0098] fuel cell external current level

Regarding claim 33, Fleckner further described said at least one field device is selected from a group consisting of: measuring apparatuses for determining a fill level of fill substance in a container, measuring apparatuses for limit level detection, measuring apparatuses for determining a flow rate (page 6, unit 0092), measuring apparatuses for determining a pressure in a line, measuring apparatuses for determining a pressure in a container, and measuring apparatuses for determining a temperature of a medium.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2863

a. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fleckner et al. (U.S. Patent Application Publication 2004/0086768) in view of Welches et al. (U.S. Patent Application Publication 2002/0036430).

Regarding claim 23, Fleckner further described a monitoring unit (fig. 1, unit 10), Fleckner does not described issues a warning/error report as soon as the energy supplied by said at least one fuel cell falls beneath a predetermined limit value. Welches described issues a warning/error report as soon as the energy supplied by said at least one fuel cell falls beneath a predetermined limit value (page 6, section 0088), in order to maintain safety of the entire system (page 6, section 0088).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fleckner to have issues a warning/error report as soon as the energy supplied by said at least one fuel cell falls beneath a predetermined limit value taught by Welches in order to maintain safety of the entire system.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Fleckner and Welches are analogous art because they are from the same field of endeavor, fuel cell power generation and delivering.

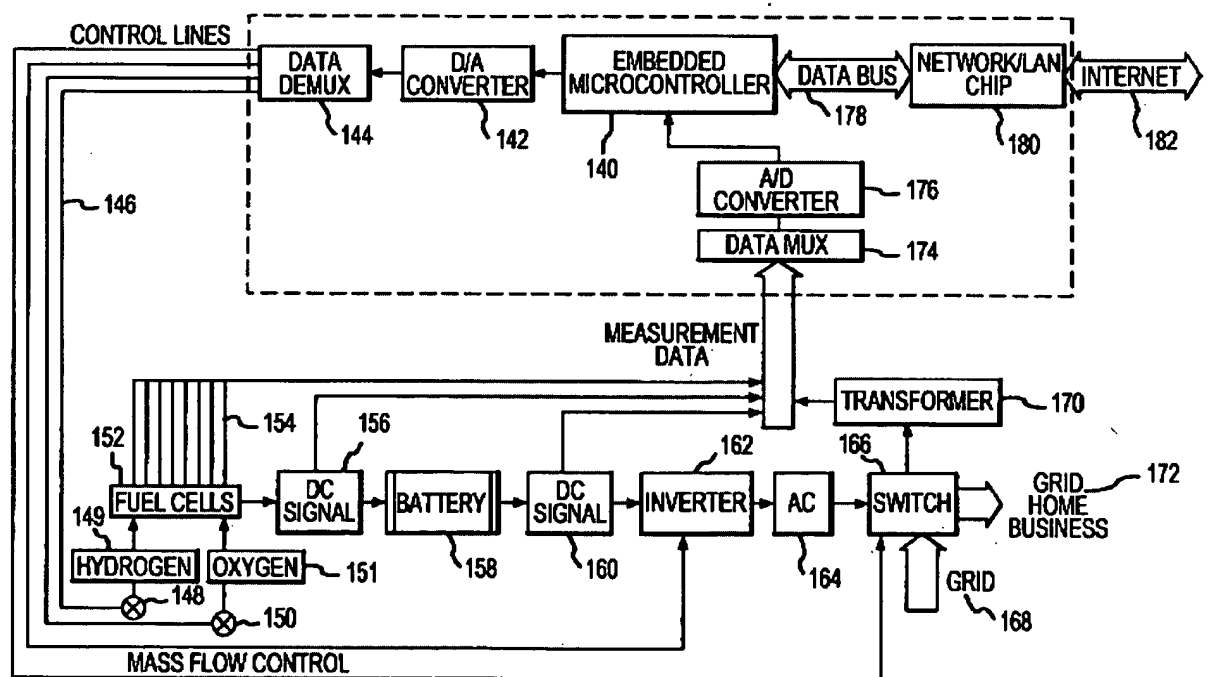


FIG.10

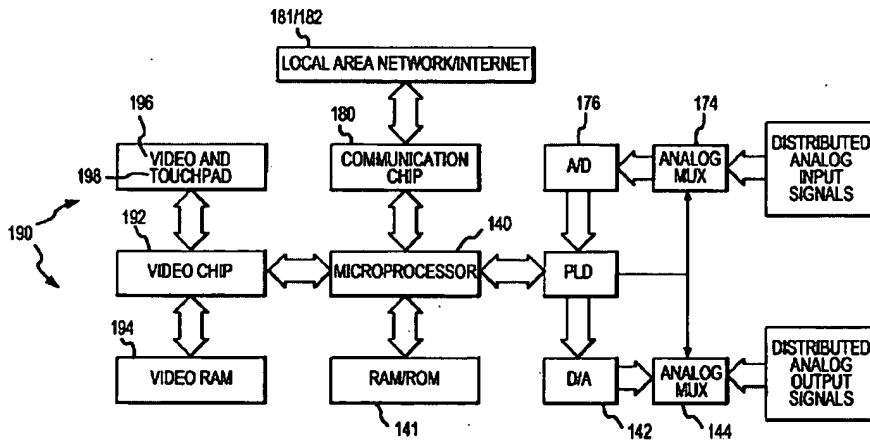


FIG. 11

b. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleckner et al. (U.S. Patent Application Publication 2004/0086768) in view of Breed et al. (U.S. Patent 6,615,656).

Regarding claim 34, Fleckner further described said at least one field device (fig. 1, unit 22) uses for determining a fill level of fill substance in a container (fig. 1, unit 20, 14, 16, page 6, section 0091-0098).

Fleckner does not described use of ultrasonic waves, Breed described use of ultrasonic waves (Col. 23, Lines 30-36), in order to increase the accuracy of the sensing (Col. 4, Lines 15-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fleckner to have the use of ultrasonic waves taught by Breed, in order to increase the accuracy of the sensing.

Regarding claim 35, Fleckner further described said at least one field device (fig. 1, unit 22) uses for determining a fill level of fill substance in a container (fig. 1, unit 20, 14, 16, page 6, section 0091-0098).

Fleckner does not described use of electromagnetic waves, Breed described use of electromagnetic waves (Col. 23, Lines 30-36), in order to increase the accuracy of the sensing (Col. 4, Lines 15-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fleckner to have the use of electromagnetic waves taught by Breed, in order to increase the accuracy of the sensing.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Fleckner and Breeds are analogous art because they are from the same field of endeavor, system measuring fuel level.

Response to Arguments

Art Unit: 2863

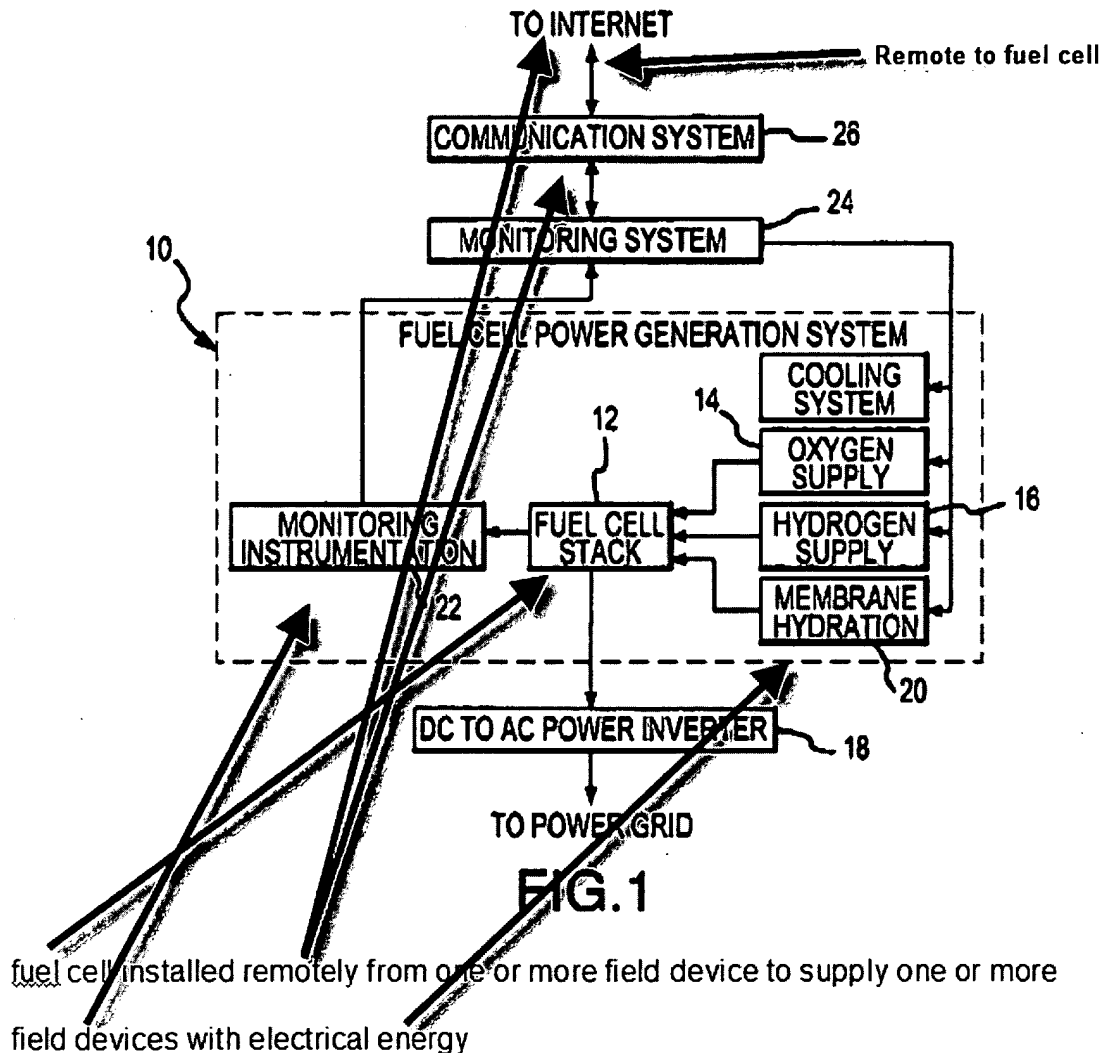
7. Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments filed 01/25/2007 have been fully considered but they are not persuasive.

A. Applicant argues that the prior art does not show the ' the use of fuel cell installed remotely from one or more field device to supply one or more field devices with electrical energy' (page 8 of the applicant Remarks lines 19-24).

The applicant also compares the applicant specification to the prior art (page 8 of the applicant Remarks lines 9-19).

Art Unit: 2863

Fleckner described ' the use of fuel cell installed remotely from one or more field device to supply one or more field devices with electrical energy' in fig. 1 below



As regarding the comparison of the applicant specification to the prior art, the examiner reminds the applicant that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Words in patent claims are given their ordinary meaning in the usage of the field of the invention, unless the text of the patent makes clear that a word was used with a special meaning; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (en banc). *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298, 67 USPQ2d 1132, 1136 (Fed. Cir. 2003)

USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

Art Unit: 2863

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRYAN BUI
PRIMARY EXAMINER



TL